

WHAT IS CLAIMED IS:

1. A gain control circuit, comprising:
  - a transmission power amplifier which amplifies a transmission signal to a predetermined level;
  - 5 an adjacent channel leak power ratio monitor which finds a ratio of a distortion element corresponding to adjacent channel leak power to a main element from an output signal of the transmission power amplifier, and outputs the found ratio as an ACPR monitor value;
  - 10 a power supply control section which variably controls power supply to the transmission power amplifier with use of the ACPR monitor value supplied from the adjacent channel leak power ratio monitor; and a transmission signal level variable section
  - 15 which varies a level of the transmission signal by controlling a gain of a transmission signal path on the basis of a transmission level monitor value supplied from the adjacent channel leak power ratio monitor.
2. The circuit according to claim 1, wherein the transmission signal level variable section includes:
  - a variable gain amplifier provided in the transmission signal path; and a comparator which compares the transmission level monitor value supplied from the adjacent channel leak power ratio monitor to a gain setting value supplied from a base band signal processing section, and supplies the result of the comparison performed through the comparator to the

variable gain amplifier as a variable gain control signal.

3. The circuit according to claim 1, wherein the adjacent channel leak power ratio monitor comprises: a squaring circuit which squares an output signal of the transmission power amplifier; a first band path filter which extracts a distortion element corresponding to the adjacent channel leak power from an output signal of the squaring circuit; a second band path filter which extracts an element corresponding to a main part of the output signal of the squaring circuit; and a subtracter which performs a subtraction process between an output of the first band path filter and an output of the second band path filter.

15 4. The circuit according to claim 3, wherein the squaring circuit includes a multi-plier which multiplies at least two signals together.

5. The circuit according to claim 3, wherein the squaring circuit includes a non-linear device having 20 a second-order distortion coefficient.

6. A radio communication terminal comprising a radio transmission section, wherein  
the radio transmission section comprising:  
a transmission power amplifier which amplifies  
25 a transmission signal to a predetermined level;  
an adjacent channel leak power ratio monitor which finds a ratio of a distortion element corresponding to

adjacent channel leak power to a main element from an output signal of the transmission power amplifier, and outputs the found ratio as an ACPR monitor value;

- 5           a power supply control section which variably controls power supply to the transmission power amplifier with use of the ACPR monitor value supplied from the adjacent channel leak power ratio monitor; and
- 10          a transmission signal level variable section which varies a level of the transmission signal by controlling a gain of a transmission signal path on the basis of a transmission level monitor value supplied from the adjacent channel leak power ratio monitor.

7. The radio communication terminal according to claim 6, wherein the transmission signal level variable section includes: a variable gain amplifier provided in the transmission signal path; and a comparator which compares the transmission level monitor value supplied from the adjacent channel leak power ratio monitor to a gain setting value supplied from a base band signal processing section, and supplies the result of the comparison performed through the comparator to the variable gain amplifier as a variable gain control signal.

8. The radio communication terminal according to claim 6, wherein the adjacent channel leak power ratio monitor comprises: a squaring circuit which squares an output signal of the transmission power amplifier;

a first band path filter which extracts a distortion element corresponding to the adjacent channel leak power from an output signal of the squaring circuit; a second band path filter which extracts an element corresponding to a main part of the output signal of the squaring circuit; and a subtracter which performs a subtraction process between an output of the first band path filter and an output of the second band path filter.

10        9. The radio communication terminal according to claim 8, wherein the squaring circuit includes a multiplier which multiplies at least two signals together.

15        10. The radio communication terminal according to claim 8, wherein the squaring circuit includes a non-linear device having a second-order distortion coefficient.

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